

ENCLOSURE

## **Summary Highlights of NRC/DOE Technical Exchange on Electronic Submissions**

December 10, 2002  
Las Vegas, Nevada

### **Introduction and Objectives**

This meeting is the second Technical Exchange between the U.S. Nuclear Regulatory Commission (NRC) staff and U.S. Department of Energy (DOE) concerning the electronic submission of documents associated with a potential license application and associated proceedings for a Yucca Mountain high-level waste (HLW) repository. The NRC and DOE discussed technical issues and challenges affecting the electronic submission of documents. NRC stated that the goals of the technical exchanges are to achieve system inclusiveness, fidelity, accessibility and reliability.

The agenda and attendance list are provided as Attachments 1 and 2, respectively. Copies of the presenters' handouts and related written materials are provided as Attachment 3. Highlights from the Technical Exchange are discussed below.

### **Meeting Summary**

#### **1) High-Level Waste Information Architecture**

The NRC staff provided a conceptual overview of the various information collections that will be used to support the potential HLW proceedings. The various internal and external systems for managing electronic information are displayed on a graphic entitled, "HLW Information Architecture." Collections outside of NRC's firewall include the Licensing Support Network (LSN), NRC's Publicly Available Records System (PARS), the Electronic Hearing Docket (EHD), and the Electronic Information Exchange (EIE). Agency-wide Documents Access and Management System (ADAMS) and Digital Data Management System (DDMS) are two major information collections inside NRC's firewall. ADAMS is the collection of all NRC official agency records and will serve as a vehicle to populate NRC's HLW collection in supporting the LSN. DDMS will collect and manage all evidentiary material in digital format during a hearing.

#### **2) Electronic Information Exchange (EIE) Update**

NRC staff discussed the current status of the use of EIE, new activities, the Adjudicatory Pilot, Electronic Maintenance and Submission of Information Proposed Rule update and future activities. EIE allows the NRC to exchange material electronically with stakeholders and other Federal agencies via the Internet. The EIE uses public key infrastructure (PKI) and digital signaturing technology to authenticate documents and to validate user information.

The guidance in Regulatory Issue Summary (RIS) 2001-05, "Guidance on Submitting Documents to the NRC by Electronic Information Exchange or on CD-ROM," currently limits files to 15 Megabytes (Mb) per transmission. Larger documents can be sent via CD-ROM. No paper copy is needed to accompany EIE or CD-ROM submittals.

The EIE System uses digital certificates and signatures and is expanding to include some Part 40 and 70 submittals. The EIE accepts a wide range of formats but preferred formats include: Portable Document Format (PDF) Image + Text, PDF Normal, PDF Image, and Multi-page tagged image file format (TIFF). EIE does not accept classified material, safeguards material, Privacy Act information, or other non-public documents. Currently, the only acceptable web-site browsers are Netscape and Internet Explorer. The NRC staff explained the EIE process using web shots of the NRC Internet home page and pertinent screens.

DOE may participate in the current EIE process if they wish, keeping in mind the current system constraints on document size.

Requirements are being reviewed internally and with a consultant to identify new requirements and to test transmission of large documents. The Adjudicatory Pilot has begun to test the submittal, distribution, and service of hearing documents. Documents have been sent and received, administrative and technical processes are being tested, and results will be available at the conclusion of the pilot. The status of the Electronic Maintenance and Submission of Information Proposed Rule was also discussed. Changes to the current EIE environment will be based on new requirements identified, Electronic Maintenance and Submission of Information Proposed Rule comments, security, and new technologies.

### **3) Electronic Hearing Docket (EHD) Update**

The NRC staff provided an update on the Electronic Hearing Docket (EHD). The 10 CFR, Part 2, Subpart J requirements for the electronic docket for the HLW proceeding and the electronic filing requirements were discussed. The EHD is a web based application with a web-site and dedicated server. The web-site contains folders for storing documents and document search menus. An adjudicatory pilot to test the use of EIE for document service is underway. A new search engine for ADAMS will be used for EHD when it is fully operational.

Future activities for EHD were discussed including system integration with other HLW components. The staff provided sample web pages to illustrate methods of accessing the HLW-EHD Internet home page.

A representative of the Nevada Nuclear Waste Task Force asked whether a docket could be established prior to a license application being submitted. NRC staff clarified that under 10 CFR Part 2, Subpart J, there will be both a pre-license application phase hearing docket and a licensing proceeding docket.

### **4) Electronic Courtroom Update**

The NRC staff explained the functioning of the electronic courtroom. The process includes entry of documents in the Licensing Support Network (LSN), access to repositories of discovery documents, participant submittal through EIE, loading of documents on the EHD, downloading to the Digital Data Management System (DDMS), use of DDMS in courtroom proceedings, upload of DDMS output into EHD via the Document Processing Center (DPC), broadcast of input via electronic media (e.g., videoconferencing, videostreaming, etc.), and generation of a case record.

The objectives of the electronic courtroom are to provide an integrated HLW licensing proceeding environment for judges and counsel and other authorized representatives through effective and efficient management of information. The operational approach is to have pre-filed potential exhibits downloaded from the EHD into the courtroom database as they are introduced in the proceeding. The courtroom database will be updated daily to refresh the EHD. Electronic media issues include the introduction of large documents, courtroom retrieval and use during proceedings, navigation within documents to display pages quickly and clearly, digital recording for case file, rules/criteria for evidence, retirement to National Archives, and courtroom case management and web-site accessibility. Implementation of the electronic courtroom will require training for judges, counsel, clerks, and support staff personnel. Current planning dates of the DDMS and future components were also given.

A Department of Energy representative asked for clarification of the relationship between the LSN and the EHD. NRC noted that the LSN represents each party's documentary materials for discovery purposes while the EHD contains only the documents submitted to the official proceeding record.

The LSN requires a bibliographic header and an image for documents which are graphic-oriented in nature, and a header and searchable text file for textual documents. Subpart J also requires that LSN participants identify via the LSN where an image version of documentary material may be acquired. The transaction between a requesting party and the originator is outside the scope of the NRC systems (EIE, EHD, DDMS). NRC is not involved in the agreement as to what format gets delivered.

**5) Technical Issues with a Potential Electronic License Application Submission and Other Large Documents Update**

The NRC staff discussed the technical issues associated with a potential electronic license application submission. Issues include voluminous and complex documents, varying information technology (IT) environments, the ability to transmit electronically through EIE, the ability to capture a document as an official agency record, the ability to search and navigate a document in its entirety with the ability to view and download pages in a timely manner, and the ability to produce paper copies when requested. NRC's approach and status of addressing the challenges/technical issues was presented.

NRC plans to issue guidance on the electronic submission of textual, graphic-oriented, and other documentary materials in the HLW proceeding in mid 2003. Guidance will likely cover attributes such as: file format; resolution; segmentation; naming conventions; structure; and storage media. Expected file formats include: PDF formatted text and graphics; PDF searchable image; and PDF image only.

**6) Response to Action Items for June 2002 Electronic Submissions Technical Exchange**

The NRC staff discussed IT issues raised by DOE submissions. Transmittal letters may not completely describe enclosures and at times it is unclear which enclosures are submitted in paper and electronic form. CD-ROMs may not include instructions on their use or the instructions may be difficult to locate. There is no roadmap that documents relationships, links, etc. that have been established between and among electronic

folders and files on the CD-ROM. Issues associated with the various types of PDF formats, large file sizes, and file formats not supported in NRC's general IT environment were also discussed. Two DOE submissions were used to highlight technical challenges and issues.

DOE asked for clarification of the need for the NRC to capture files submitted on CD-ROMs if the hard copy of a document is considered the official record. NRC noted that not all DOE documentary materials are provided in hard copy form (e.g., software, computer input/output files) and that some CD-ROMs have both text and data files. NRC also noted that electronic submittals will be required under 10 CFR Part 2, Subpart J.

It became apparent that some of the DOE submittals contained information intended to be convenient for technical staff and may not have had instructions necessary to categorize it in a records system. Future discussions are intended to establish requirements to make submittals useable for technical communication as well as records management.

DOE asked to participate in the development of the guidance. Both NRC and DOE recognized that they face common issues, including addressing National Archives and Records Administration archival requirements and compliance with Section 508 of the Rehabilitation Act.

#### **7) DOE's Experience, Progress, and Solutions in Delivering Large Documents to the Public**

The Office of Civilian Radioactive Waste Management's (OCRWM) goal is to make documents available to the public with the most efficient and effective technology available, including the Internet. Improvements are based on evolving technology. The presentation focused on past Internet distribution of program documents and resulting lessons learned. Methods of program document distribution include: Internet; hand delivery; mailing list; public meetings and hearings; exhibits; presentations; science centers; toll-free information line (1-800-225-6972); and reading rooms.

A background on the posting of documents to the Internet and a list of such documents was presented. Past comments from the public about accessing the Final EIS on the Internet were received through public feedback channels. Internet accessibility, length of time and amount of paper needed to print a document from home, and difficulty reading a large document online were issues raised by the public.

BSC Publication Services explained that hypertext markup language (HTML), portable document format (PDF), and images scanned from hard copy (tagged image file format (tiff), graphical interface format (gif), and joint photographic expert group (jpeg)) are the electronic formats used on the OCRWM web-site. A slow machine, slow modem, and internet browser software capable of reading Web pages facilitated OCRWM to favor HTML and to limit PDF file size to 3 Mb or less. Lessons learned include: fragmenting a PDF document to a size less than 3 Mb is more problematic than helpful; new capabilities are available as technology evolves; consistency with commonly accepted standards and interfaces accustomed to users is favorable; complex graphics and larger file size must be taken into account when converting for the Internet. DOE has used "Help" screens, "Contact Us" links, a toll-free number, e-mail address for contacts,

information to allow users to determine whether they want to download files; a choice of HTML or PDF; and navigation aids within PDF and HTML documents.

DOE assumptions for users in 2002 include: user community generally has more capable computers than in the past; users better understand how to access Internet pages and download files; and users have more access to library computer systems that have Internet access and human assistance.

#### **8) Status of NRC's Effort for Putting Its Documentary Collection Out on the Licensing Support Network (LSN)**

The NRC staff gave an update on the NRC's efforts to place the NRC document collection on the LSN. No NRC documents are on the LSN server. However, the majority of HLW documents are in electronic format. Conversion and processing efforts to electronically capture other NRC and CNWRA documents are upcoming. NRC will screen documents for Homeland Security Information prior to making them available to the LSN server.

Actions have been taken to ensure compliance with LSN requirements. NRC staff have been directed to make their documents available to the LSN, and to encourage other parties to make their documents available to the LSN. NRC and contractor documents are being evaluated for inclusion in the LSN. Documents under evaluation include files with graphics, data logs, scientific notebooks, and computer print-outs.

NRC will place documents on the NRC HLW server after completing screening for Sensitive Homeland Security Information. Existing policies on the dissemination of information routinely provided to the public has been re-examined. Screening criteria and policy for withholding Sensitive Homeland Security Information have been approved by the Commission. The majority of documents are expected to become publicly available based on Commission guidance.

DOE asked whether NRC would include e-mails in the LSN. The NRC noted that e-mail that meets agency requirements as official records would be made available.

#### **9) DOE's Sensitive Homeland Security Information Processing Controls**

Operations Security consists of review of all public documents and restricted access to potentially sensitive information. DOE is working with the University of Nevada, Las Vegas Information Science Research Institute to develop an automated tool for Operations Security reviews. Documents first go through an auto OPSEC screening. If no potentially sensitive information is found, the document continues to be processed for LSN review. If potentially sensitive information exists, the document is manually reviewed, sensitivity and controls required are determined, and then processing for LSN review takes place.

DOE had Ecdysis software developed by the University of Nevada, Las Vegas, to aid general categorization tasks. DOE provided 100 documents with non-potentially sensitive information and 10 potentially sensitive information documents for testing. Ecdysis automatically identified 69 of the non-potentially sensitive information documents and marked the rest for manual review.

Ecdysis categorizes documents as either potentially sensitive or non-potentially sensitive. A greater threshold favoring potentially sensitive information is used. Ecdysis establishes relationships between features and calculates probabilities. Knowledge extraction works by determining discriminating keywords, discovering statistical phrases, defining expert rules, and compiling sensitive patterns. The categorization phase includes detecting keywords, locating statistical phrases, rules fired by the engine, and parsing for sensitive patterns.

Further refinement to reduce manual review percentages is in progress. Ecdysis will reduce manual efforts by automatically screening for potentially sensitive information, identifying potentially sensitive information within documents, and providing an interactive tool for efficient document review.

NRC and DOE discussed approaches to manage sensitive information in a portion of a document that otherwise would be released to the public. NRC explained how this situation is addressed in other regulatory programs to enable information to be made publicly available. DOE stated their intention to comply with existing NRC policy or regulations on this issue.

#### 10) Discussion

A representative of the Nevada Nuclear Waste Task Force expressed reservations that the HLW proceeding's reliance on access to electronic versions of documents would not be an adequate substitute for paper documents, particularly due to the computer expertise needed to effectively participate. The representative also expressed concerns that elaborate electronic procedures could raise questions about the credibility of the process.

A representative of the State of Nevada commented that a highly automated courtroom environment as envisioned by the Atomic Safety Licensing Board Panel may unduly burden potential parties due to the inexperience of attorneys. Extensive training would be required to enable parties to effectively participate. The representative noted the possibility of bias in the proceeding due to the inexperience of some attorneys in an electronic courtroom setting.

#### 11) Closing Remarks

NRC and DOE agreed the meeting was successful and appreciated the participation of everyone involved. Future exchanges will address the topics discussed.

Handwritten signature of N. King Stablein, dated 12/11/02.

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Handwritten signature of Dennis R. Williams, dated 12/11/2002.

Dennis R. Williams, Acting Deputy Director  
Office of License Application and Strategy  
Office of Repository Development  
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